PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Satoshi HANADA, et al.

Atty. Dkt.: Q67358

Appln. No.:

Confirmation No.: Unknown

Group Art Unit: Unknown

Filed: November 28, 2001

Examiner: Unassigned

For: POLYOLEFIN RESIN FOAMED SHEET AND PRODUCTION METHOD THEREOF

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Page 16, first full paragraph:

In this case, as the additional layer provided between the above-mentioned foamed layer and non-foamed layer, the additional layer made of a polyolefin resin selected from the above-mentioned polyolefin having long chain branch and polyolefin having a weight-average molecular weight of 1×10^5 or more, is suitable. By using such a layer as an intermediate layer, a foamed sheet excellent in surface smoothness can be obtained stably, and the surface smoothness of the resulting sheet is also excellent.

Page 28, second full paragraph:

A mixture prepared by blending at a weight ratio of 70/30 of a polypropylene and a polyethylene obtained by a two-stage polymerization method was used as a constituent material

of a foamed layer. A method of producing this propylene, a method of pelletizing it, and a method of blending a constituent material of a foamed layer are described below.

Page 33, paragraph bridging pages 33-34:

An apparatus prepared by attaching a 90 mmΦ circular die to a 50 mmΦ twin screw extruder and a 32 mmΦ single screw extruder was used. A mixture prepared by blending 1 part by weight of a core material (trade name: Hydrocerol; manufactured by Baylinger Ingelhyme Chemicals) with 100 parts by weight of a 70/30 (ratio by weight) mixture of polypropylene/polyethylene for a foamed layer was put into the 50 mmΦ twin screw extruder, 1 part by weight of carbon dioxide gas was further injected into this while melt-kneading, to sufficiently knead the resin mixture and a carbon dioxide gas, then, the mixture was fed into a die controlled at 210°C. On the other hand, the above-mentioned dry blended mixture for a non-foamed layer was put into the 32 mmΦ single screw extruder, and melt-kneaded and fed into a die controlled at 210°C. The resin composition for a foamed layer from the 50 mmΦ twin screw extruder and the resin composition for a non-foamed layer from the 32 mmΦ single screw extruder were laminated in a die, then, extruded to give a cylinder, and the extruded cylindrical sheet was expanded, while being cooled, along a mandrel having an outer diameter of 210 mm which was set directly after a die and cooled by circulating water of 6°C through inside. Thus obtained cylindrical two-kind three-layer foamed sheet was cut by a cutter, and opened to give a flat form two-kind three-layer foamed sheet, and stretched by a stretching machine. The physical properties of the resulted foamed sheet were evaluated. The results are shown in Table 1.

Page 44, second full paragraph:

70 parts by weight of a pellet of polypropylene having long chain branch (melting point: 159.0°C; crystallization temperature: 130.1°C; MFR (230°C): 2.2 g/10 min.) and 30 parts by weight of a polyethylene (trade name: Sumikacene G201, manufactured by Sumitomo Chemical Co., Ltd.) were dry-blended to give a mixture which was used.

Page 45, Table 1:

Item	Example 1	Example 2	Example 3	Comparative example 1
Amount of recycled polyolefin resin contained in non-foamed layer (% by weight)	21	48	21	0
Thickness of sheet (mm)	1.2	1.2	1.2	1.2
Thickness of non-foamed surface layer (mm)	0.1	0.1	0.1	0.1
Thickness of non-foamed layer (mm) (layer other than foamed layer and non-foamed surface layer)	0	0	0.1	0
Foaming ratio of foamed layer (fold)	4.5	4.5	4.5	4.5
Ra (μm)	3.7	3.8	3.2	4.8

Page 46, Table 2:

Item	Example 4	Example 5	Example 6	Comparative example 2
Amount of recycled polyolefin resin contained in non-foamed layer (% by weight)	30	48	30	0
Thickness of sheet (mm)	1.2	1.2	1.2	1.2
Thickness of non-foamed surface layer (mm)	0.1	0.1	0.1	0.1
Thickness of non-foamed layer (mm) (layer other than foamed layer and non-foamed surface layer)	0	0	0.1	0
Foaming ratio of foamed layer (fold)	4.5	4.5	4.5	4.5
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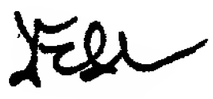
REMARKS

The specification has been amended to correct typographical errors. The present amendments are not considered or intended to be a narrowing amendment surrendering any equivalents.

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,



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Date: November 28, 2001

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

Page 16, first full paragraph:

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